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A New Japanese Species of *Leptoteleia* KIEFFER
(Hymenoptera, Scelionidae), Reared from
Eggs of the Green Tree Cricket

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Abstract *Leptoteleia japonica* sp. nov., a solitary egg parasitoid of the green tree cricket *Calyptotrypus hibinonis*, is described. The genus *Leptoteleia* KIEFFER (Hymenoptera, Scelionidae) is newly recorded from Japan.

Key words: *Leptoteleia*; Scelionidae; egg parasitoid; green tree cricket; biological control.

Green tree cricket, *Calyptotrypus hibinonis* (MATSUMURA) (Orthoptera, Eneopteridae), is a pest insect that invaded Japan from Southeast Asia. This cricket feeds on leaves of various trees, and often damages the fruits of persimmon in Japan. The females lay their eggs under the bark of trees in the fall (TAKEDA, 1985).

Recently, Professor TAKADA of Gifu University (Gifu, Japan) found out a scelionid wasp parasitic on the cricket eggs. This wasp was identified with a species of the genus *Leptoteleia* KIEFFER by Dr. L. MASNER of Agriculture Canada (personal communication). This parasitic wasp is described as a new species below, and the genus *Leptoteleia* is newly recorded from Japan.

The genus *Leptoteleia* has been represented by twenty five species in the New World, two in India and two in Africa. MASNER (1978) reviewed the New World species of this genus and classified them into three species-groups, viz. the *oecanthi*-, *arndti*-, and *americana*-groups. At the same time, he indicated the occurrence of several undescribed Oriental species all belonging to the *oecanthi*-group. I had the opportunity to examine the *Leptoteleia* species preserved in the Canadian National Collection (CNCI: Agriculture Canada), and I consider that all of the Asian species belong to a subgroup of the *oecanthi*-group. This Oriental subgroup is separated from the New World subgroup by the following characters: Frons without distinct depression; mesosoma not so elongated; notauli distinct; metasoma in lateral view usually with gentle steps between T2–T3, and T3–T4.

Leptoteleia japonica sp. nov.

(Japanese name: Aomatsumushi-tamago-kurobachi)

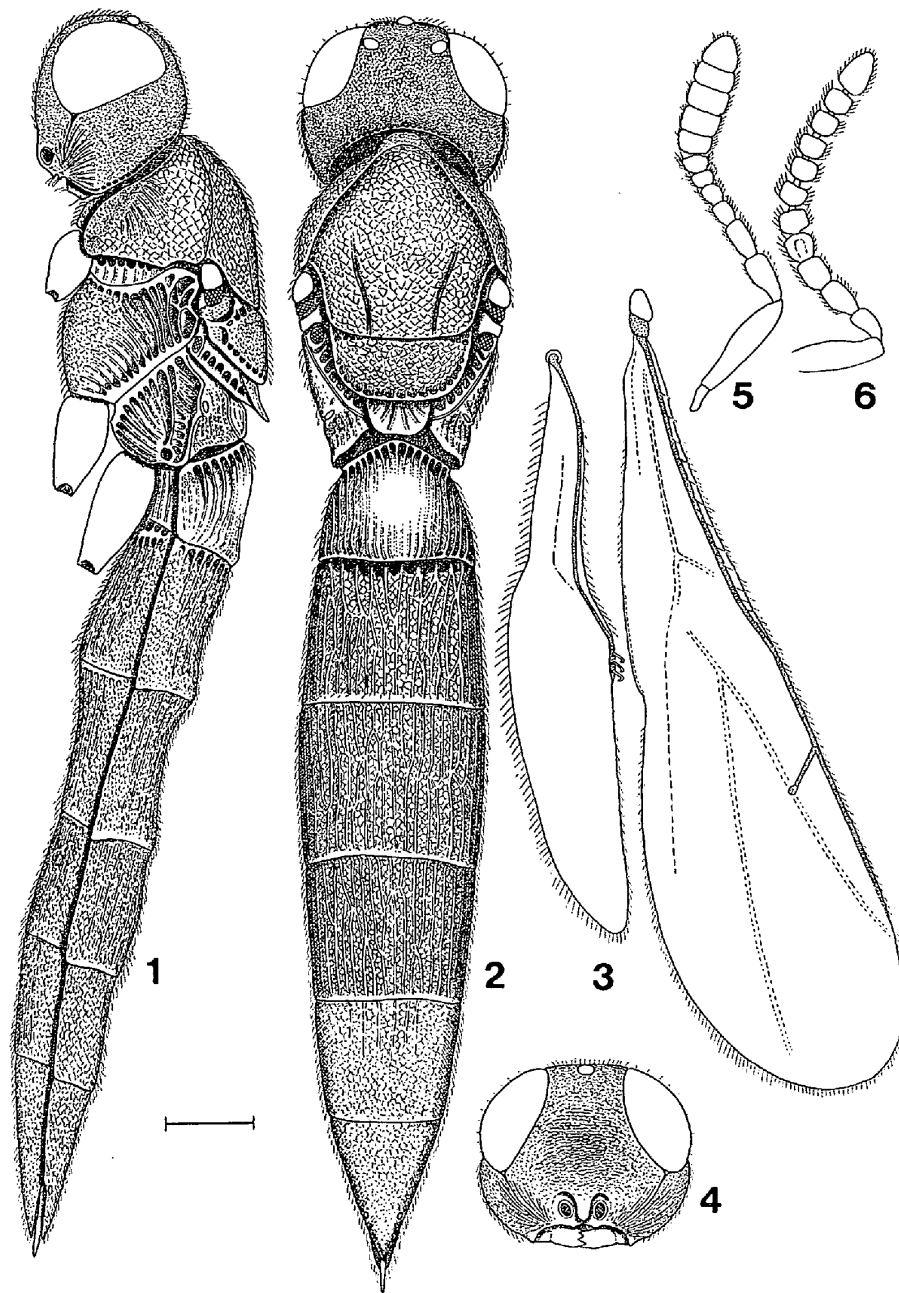
(Figs. 1-6)

Diagnosis and Recognition (Female and male). Body predominantly black; head cubical; eye with scattered hairs; vertex granulate; frons merely with small, very shallow depression in middle; pronotum and mesoscutum not so elongate; notauli present, abbreviated anteriorly, convergent posteriorly; dorsellum expanded into semielliptic lamella, without notch at apex; pronotal side with fan of weak ridges antero-ventrally; netrion shortened ventrally; metasoma in lateral view with weak steps between T2-T3 and T3-T4; in male, middle and hind basitarsi broadened, blade-like; in female, T6 exposed, and T7 inseparable from T6.

Description. Female (Holotype). Length 2.9 mm. Head and mesosoma black; metasoma and clava (A8-A12) blackish brown; all legs except dark claws, and antenna except clava brownish yellow; mandible reddish yellow; tegula light brown; wings clear.

Head finely granulate with dense decumbent pilosity; head in dorsal view nearly cubical, wider than long (47: 38), slightly convex; vertex long, widely encroached by eyes; temple long, slightly shorter than eye (17: 19); eye large, with scattered hairs; inner orbits nearly parallel, slightly convergent anteriorly; posterior ocellus continuous with inner orbit; ocelli arranged in equilateral triangle; head in frontal view elliptical, wider than high (47: 35); frons with minimum width in front of anterior ocellus, as long as maximum width of eye; frons with small, very shallow depression in middle; subocular suture percurrent but only visible in upper half; malar space long, with fan of striae; clypeus very small; head in lateral view slightly longer than high (38: 35); eye large, occupying about half of head length; postgena slightly convex; mandible small, clasped; antenna with relative proportions of antennomeres, 25:6, 11:4, 8:4, 6:4, 5:5, 4:5, 4:6, 6:8, 6:8, 5:8, 5:8, 8:8; clava 5-segmented, indistinctly abrupt.

Mesosoma in dorsal view longer than wide (75: 50); cervical part of pronotum short; mesonotum flattened, faintly cracked with dense decumbent pilosity; mesoscutum rounded pentagon-shape, as long as wide (43: 43); notauli shallow and narrow, abbreviated anteriorly, convergent posteriorly; parapsidal carina absent; transscutal suture straight, narrow; scutellum transverse (16: 33), rounded posteriorly, posterior margin of scutellum distinctly foveolate; dorsellum expanded into semielliptic lamella, 0.5 times as long as scutellum, glabrous, with fan of 6 weak ridges, without notch at apex; propodeum strongly scooped out, corresponding to anterior margin of T1; mesosoma in lateral view longer than high (75: 47); side of pronotum faintly cracked with decumbent pilosity, except antero-ventral area shining with fan of weak ridges; epomia more or less developed; netrion deeply foveolate along anterior margin, shortened ventrally; mesopleuron faintly cracked with decumbent pilosity antero-ventrally, deeply foveolate along netrion; mesopleural



Figs. 1-6. *Leptoteleia japonica* sp. nov. — 1-5. Female; 1, body, lateral view; 2, body, dorsal view; 3, right wings; 4, head, frontal view; 5, antenna. — 6, Male antenna. Scale line=0.2 mm.

depression diagonal, shallow, glabrous, with many faint oblique striae; mesopleural carina absent; metapleuron shining, glabrous, with many shallow horizontal striae and deep fovea posteriorly; fore wing relatively short and narrow (180: 50), exposing T6+T7, with 15-16 long, semierect bristles on submarginal vein; marginal

vein elongate, much longer than stigmal vein (25: 12); stigmal vein moderately slant; postmarginal vein distinctly longer than marginal vein (38: 25); basal, median and radial sector nonpigmented, spectral; middle and hind basitarsi slender and cylindrical.

Metasoma in dorsal view much longer than wide (190: 45); T1 subconical, wider than long (37: 30), slightly elevated anteriorly, almost glabrous, shining, with strong longitudinal costae, anterior margin carinate and foveolate, posterior margin slightly undulate; T2–T7 irregularly cracked, with dense appressed hairs and strong longitudinal costae except T5–T7; T2 wider than long (44: 30), slightly depressed medially, with row of deep foveolae along anterior margin; T3 wider than long (46: 36), slightly depressed antero-medially; T4 wider than long (44: 31); T5 trapezoidal, wider than long (36: 27); T6+T7 triangular, longer than wide (32: 26); metasoma in lateral view much longer than high (190: 24), with gentle steps between T1–T2, T2–T3, T3–T4 and S2–S3, respectively; laterotergites tightly appressed to sternites; S1 glabrous, shining, with row of deep foveolae along anterior margin; S2–S7 sculptured like T2–T7; S2 with 2 rows of deep foveolae along anterior margin.

Male (Allotype). Length 2.4 mm. Differs from female as follows: Antenna brownish yellow except dark A12. Antenna thread-like, with relative proportions of antennomeres, 26:6, 8:5, 8:6, 7:7, 7:7, 6:7, 6:7, 6:7, 5:7, 5:7, 5:7, 9:7; A2–A12 with dense short hairs; A5 with distinct keel reaching to basal two thirds of antennomere. Fore wing relatively long, reaching tip of metasoma. Middle and hind basitarsi broadened, blade-like, shorter than in female; middle basitarsus about 1.5 times as wide as depth, shorter than tarsomeres 2–5 together (18: 24); hind basitarsus about 2 times as wide as depth, longer than tarsomeres 2–5 together (32: 25). T6 trapezoidal; T7 very short, transverse.

Variability. No substantial variability encountered. Body length in female varies from 2.5 to 2.9 mm, and in male from 2.3 to 2.4 mm.

Type Material. Holotype: Female, Japan, Gifu, Kani, em. unknown, 1989, ex egg of *Calyptotrypus hibinonis* (MATSUMURA), bred by S. TAKEDA. Deposited in the Entomological Laboratory, Faculty of Agriculture, Meijo University. Allotype: Male, same data as holotype. Paratypes: 6 ♀♀, 4 ♂♂, same data as holotype; 5 ♀♀, same data as holotype but emerged in 1988; 12 ♀♀, 7 ♂♂, same data as holotype but emerged in 1990; 2 ♀♀, Japan, Aichi, Seto, Jokoji, 21. IX. 1991, A. UKAI, sweep.

Distribution. Japan (Honshu).

Biology. *Leptoteleia japonica* is a solitary egg parasitoid of the green tree cricket *Calyptotrypus hibinonis* (MATSUMURA). According to Prof. S. TAKEDA (personal communication), this wasp may be univoltine, and emerges from September to October, corresponding to the ovipositing period of the host cricket.

Remarks. *Leptoteleia japonica* sp. nov. seems to be allied to the Indian species *L. peninsularis* SARASWAT, 1982, but differs from the latter in having metasoma with distinct longitudinal costae and eye with scattered hairs.

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References

- MASNER, L. 1976. Revisionary notes and keys to world genera of Scelionidae (Hymenoptera: Proctotrupoidea). *Mem. ent. Soc. Can.*, **97**: 1–87.
- 1978. A revision of the New World species of *Leptoteleia* KIEFFER (Hymenoptera: Scelionidae), egg parasites of crickets. *Canad. Ent.*, **110**: 353–380.
- SARASWAT, G. G. 1982. Some Indian Proctotrupoidea (Hymenoptera: Scelionidae). *Rec. zool. Surv. India*, **79** (3–4): 343–358.
- TAKEDA, S. 1985. Spread of distribution of the green tree cricket in Tokai district and injury to the fruits of persimmon and pear. *Shokubutsu Boeki*, **39** (7): 314–317. (In Japanese.)

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